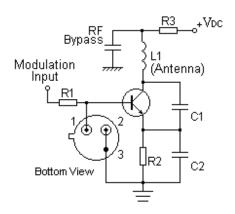
#### **Features**

- 1-port Resonator
- Metal Case for TO-39
- RoHS compatible
- Package Code TO-39
- Electrostatic Sensitive Device(ESD)

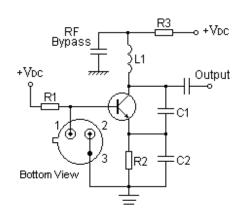


## **Application**

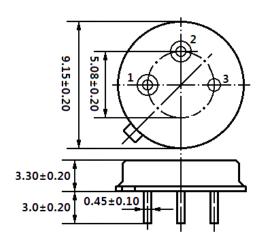
Typical Low-Power Transmitter Application



## **Typical Local Oscillator Application**



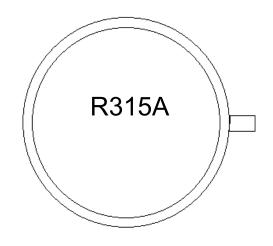
# Package Dimensions (TO-39)



**Pin Configuration** 

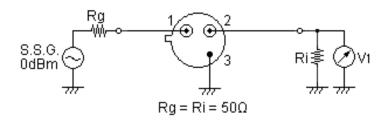
1	Input/ Output	
2	Output/ Input	
3	Ground	

### Marking

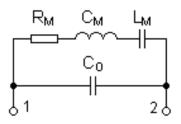


R	Manufacturer& SAW Resonator
315A	Part number

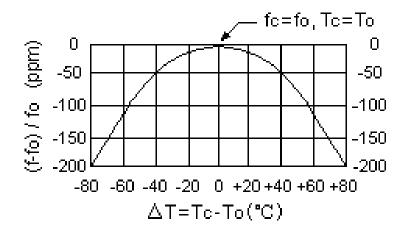
#### **Test Circuit**



### **Equivalent LC Model**



### **Temperature Characteristics**



The curve shown above accounts for resonator contribution only and does not include LC component temperature contributions.

# **Performance**

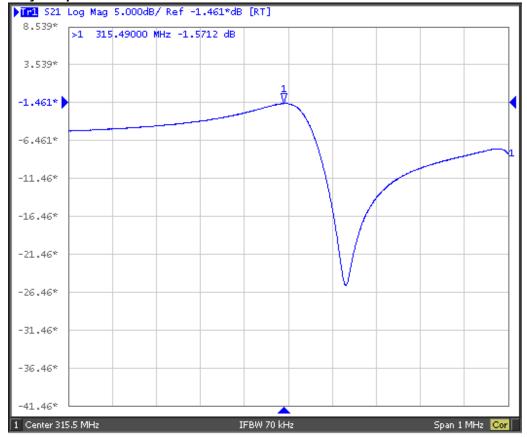
## **Maximum Rating**

Item		Value	Unit
DC Voltage	V <sub>DC</sub>	±30	V
Operation Temperature	Т	-40 ~ +85	${\mathbb C}$
Storage Temperature	T <sub>stg</sub>	-55 ~ +125	${\mathbb C}$
RF Power Dissipation	Р	10	dBm

### **Electronic Characteristics**

Item			Minimum	Typical	Maximum	Unit
Center	Absolute Frequency	f <sub>c</sub>		315.50		MHz
Frequency	Tolerance from 303.875MHz	△f <sub>c</sub>		±75		KHz
Insertion Loss(min)		IL		1.5	2.0	dB
Quality Factor	Unloaded Q	Qυ		16406		
Quality Factor	50Ω Loaded Q	$Q_L$		2436		
Temperature Stability	Turnover Temperature	T <sub>0</sub>	25	40	55	${\mathbb C}$
	Frequency Temperature Coefficient	FTC		0.032		ppm/℃
Frequency Aging	Absolute Value during the First Year			≤10		ppm/yr
DC Insulation Resistance between Any Two Pins			1.0			МΩ
RF Equivalent	Motional Resistance	R <sub>M</sub>		17.5	22.0	Ω
	Motional Inductance	L <sub>M</sub>		144.4		μΗ
RLC Model	Motional Capacitance	См		1.76		fF
	Static Capacitance	C <sub>0</sub>	2.4	2.6	2.8	pF

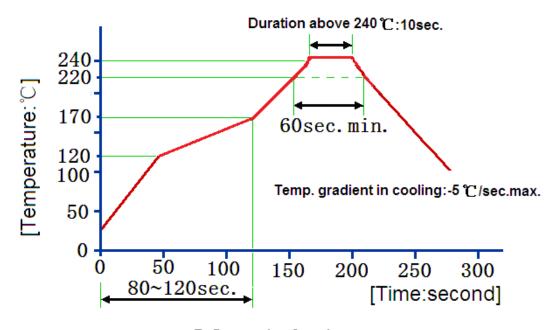
## **Frequency Response**



# Reliability (The SAW components shall remain electrical performance after tests)

No.	Test item	Test condition
110.	T COL IICIII	
1 Temperature Storage	•	(1) Temperature: 85°C±2°C, Duration: 250h, Recovery time: 2h±0.5h
	(2) Temperature: –40 °C ±3 °C , Duration: 250h ,Recovery time: 2h±0.5h	
2	Humidity Test	Conditions: 60 ℃±2 ℃ , 90~95% RH
3 Thermal Shock	Heat cycle conditions: TA=-40℃±3℃, TB=85℃±2℃, t1=t2=30min, Switch	
	Thermal Shock	time: ≤3min , Cycle time: 100 times , Recovery time : 2h±0.5h.
4	Vibration Fatigue	Frequency of vibration: 10~55Hz Amplitude:1.5mm
		Directions: X,Y and Z  Duration: 2h
5	Drop Test	Cycle time: 10 times Height: 1.0m
	6 Solder Ability Test	Temperature: 245°C±5°C Duration: 3.0s5.0s
6		Depth: DIP2/3 , SMD1/5
7		(1)Thickness of PCB:1mm , Solder condition: 260 ℃±5 ℃ , Duration: 10±1s
	Resistance to Soldering Heat	(2)Temperature of Soldering Iron: 350 ℃ ±10 ℃ , Duration: 3~4s ,
		Recovery time : 2 ± 0.5h

### **Recommended Reflow Soldering Diagram**



Reflow cycles:3 cycles max.

#### **Notes**

- 1. As a result of the particularity of inner structure of SAW products, it easy to be breakdown by electrostatic, so we should pay attention to **ESD protect** in the test.
- 2. **Static voltage** between signal load and ground may cause deterioration and destruction of the component. Please avoid static voltage.
- 3. **Ultrasonic cleaning** may cause deterioration and destruction of the component. Please avoid ultrasonic cleaning.
- 4. Only leads of component may be soldered. Please avoid soldering another part of component.
- 5. There is a close relationship between the device's performance and **matching network**. The specifications of this device are based on the test circuit shown above. L and C values may change depending on board layout. Values shown are intended as a guide only.